

ABSTRACT OF THE DISCLOSURE

A miniature confocal optical head (4) for a confocal imaging system, in particular endoscopic, includes a point source (2a) for producing a light beam (13); a ball lens (12) arranged at the tip of the optical head, partly outside, to cause the light beam to converge in an excitation point (19) located in a subsurface field under observation (14) of a sample (15), the digital aperture of the lens and the dimension of the point source being adapted to ensure confocality of the assembly; and a scanner (10, 21, 22) for rotating the point source so that the excitation point (19) scans the field under observation. The system produces a real-time confocal image (about 10 images/sec.) of very high quality and homogeneous in the entire field (the optical aberrations are constant in the entire field due to the spherical symmetry of the ball lens), achieved through a miniature head.